

IN THE CLAIMS:

Claims 1-20 (Canceled)

21. (Currently Amended) A semiconductor device, comprising:

a co-doped germanium buried layer ~~substantially of germanium~~ having a dopant concentration ranging from about $1\text{E}15$ atoms/ cm^3 to about $1\text{E}20$ atoms/ cm^3 located over a doped substrate having a dopant concentration ranging from about $1\text{E}14$ atoms/ cm^3 to about $1\text{E}15$ atoms/ cm^3 , ~~said buried layer co-doped with germanium and another p-type dopant;~~

a doped epitaxial layer having a dopant concentration ranging from about $1\text{E}14$ atoms/ cm^3 to about $1\text{E}15$ atoms/ cm^3 located over said co-doped germanium buried layer.

22. (Canceled)

23. (Currently Amended) The semiconductor device as recited in Claim 21 wherein said co-doped germanium buried layer includes a said another p-type dopant is boron.

24. (Currently Amended) The semiconductor device as recited in Claim 23 wherein said p-type dopant is boron ~~21 wherein a dopant concentration of said buried layer ranges from about $1\text{E}15$ atoms/ cm^3 to about $1\text{E}20$ atoms/ cm^3 , a dopant concentration of the doped substrate ranges from about $1\text{E}14$ atoms/ cm^3 to about $1\text{E}15$ atoms/ cm^3 , and a dopant concentration of the doped epitaxial layer ranges from about $1\text{E}14$ atoms/ cm^3 to about $1\text{E}15$ atoms/ cm^3 .~~

25. (Currently Amended) The semiconductor device as recited in Claim 21 wherein said co-doped germanium buried layer has a germanium concentration ranging from about $2E20$ atoms/cm³ to about $7E20$ atoms/cm³.

26. (Currently Amended) The semiconductor device as recited in Claim 21 wherein said co-doped germanium buried layer has a thickness ranging from about $1\text{ }\mu\text{m}$ to about $10\text{ }\mu\text{m}$.

27. (Currently Amended) The semiconductor device as recited in Claim 21 wherein said doped substrate, said co-doped germanium buried layer, and said epitaxial layer collectively have a thickness ranging from about $2\text{ }\mu\text{m}$ to about $20\text{ }\mu\text{m}$.

Claims 28-36 (Canceled)

37. (Currently Amended) An integrated circuit, comprising:
a co-doped germanium buried layer ~~substantially of germanium~~ having a dopant concentration ranging from about $1E15$ atoms/cm³ to about $1E20$ atoms/cm³ located over a doped substrate having a dopant concentration ranging from about $1E14$ atoms/cm³ to about $1E15$ atoms/cm³, ~~said buried layer co-doped with germanium and another p-type dopant;~~
a doped epitaxial layer having a dopant concentration ranging from about $1E14$ atoms/cm³ to about $1E15$ atoms/cm³ located over said co-doped germanium buried layer;

transistors located over said doped epitaxial layer; and
interconnects located within interlevel dielectric layers located over said transistors,
which ~~connect~~ provide connection to said transistors to form an operational integrated circuit.

38. (Currently Amended) The integrated circuit as recited in Claim 37 wherein said
~~another p-type dopant is~~ co-doped germanium buried layer further includes boron.

39. (Previously Presented) The integrated circuit as recited in Claim 37 wherein said
buried layer has a germanium concentration ranging from about 2×10^{20} atoms/cm³ to about 7×10^{20}
atoms/cm³.

40. (Original) The integrated circuit as recited in Claim 37 further including
additional active and passive devices.